

SECTION

2

HUMAN DISEASES



Health Education

Common Human Diseases

INTRODUCTION

Human diseases affect everyone and understanding them is crucial for maintaining good health and preventing illness.

In this section, we will explore the fascinating world of human diseases, from what they are and what causes them, to how they can be classified and prevented. We will discuss what a disease is, common causes, and typical symptoms that might indicate illness. This foundation will help us better understand the various types of diseases we encounter.

We also will discuss the classifications of human diseases, distinguishing between infectious diseases, like the flu and COVID-19, and non-infectious diseases, such as diabetes and heart disease. You will learn to identify and categorise different diseases, which will enhance your ability to recognise and understand them in real life.

We will further look at various prevention strategies and explore how vaccinations, good hygiene practices, and healthy lifestyle choices can help prevent disease. You will have the opportunity to share ideas, create personalised prevention plans, and evaluate the effectiveness of these strategies.

By actively participating in these discussions and activities, you will learn not just how to avoid diseases, but also how to take proactive steps to ensure a healthier future.

This skill will not only enhance your understanding but also empower you to take proactive steps in disease prevention. After all, the best way to stay healthy is to prevent diseases before they start. We will also explore how our environment and community play a role in disease prevention.

Let's embark on this journey to become experts in the classification of human diseases. Together, we'll unlock the knowledge needed to lead healthier lives and make informed health choices. Are you ready to dive in? Let's get started!

At the end of this section, you should be able to:

- Explain the concept of human disease
- Discuss the classification of human disease
- Discuss the various levels of prevention of diseases

Key Ideas

- **Disease** is an abnormal condition affecting the body of an organism.
- **Human disease** refers to any condition that impairs the normal functioning of the human body, causing discomfort, distress, or dysfunction.
- **A Risk factor** is a condition that increases an individual's chances of getting a particular disease.
- **Infectious diseases** are diseases that are caused by pathogens and can be transmitted directly or indirectly from person to person, or through other mediums.
- **Non-infectious diseases** are non-pathogenic diseases and cannot be transmitted from person to person.
- **Prevention** is a proactive measure used to maintain and improve health, with the aim of reducing diseases in individuals.
- **Control** means using actions and plans to lower the number of cases and impact of diseases or health conditions.

THE CONCEPT OF HUMAN DISEASE

Human Diseases: This refers to abnormal conditions that affect the body's optimum functioning, causing physical or mental discomfort.



Fig. 2.1: Feeling very sick

Major Reasons Why Diseases Spread in Ghana:

- Poverty and socioeconomic inequalities:** Low incomes and unavailable income-generating opportunities lead to limited access to healthcare and nutritious food.
- Inadequate healthcare infrastructure:** Insufficient healthcare infrastructure, particularly in rural areas, hinders access to quality healthcare services. This includes a shortage of healthcare facilities, medical equipment, trained healthcare professionals and limited access to diagnostics and treatment.



Fig. 2.2: Ghana needs more healthcare facilities

- iii. **Limited access to clean water and sanitation:** Inadequate access to clean water sources, poor sanitation facilities, lack of hygiene and improper waste management practices increase the risk of waterborne diseases, such as diarrhea, cholera and typhoid fever.



Fig. 2.3: A community in need of clean tap water

- iv. **Vector-borne diseases:** A vector refers to an organism such as a mosquito, tick or flea that can transmit pathogens (bacteria, viruses or parasites) from one host to another.

Ghana's tropical climate and ecological conditions support the spread of vector-borne diseases like malaria and dengue fever. Factors such as stagnant water, inadequate mosquito control measures and limited access to insecticide-treated bed nets contribute to their prevalence.



Fig. 2.4: A mosquito biting its victim

- v. **High prevalence of communicable diseases:** A communicable disease, also known as an infectious disease or a transmissible disease is an illness caused by an attacking agent, such as bacteria, viruses, parasites, or fungi and can be transmitted from a person, animal, or object to another person, either directly or indirectly. Communicable diseases include HIV/AIDS, COVID-19, tuberculosis and vaccine-preventable diseases like measles.



Fig. 2.5: A child with measles

- vi. **Lifestyle factors:** Changing lifestyle patterns, including unhealthy diets, sedentary lifestyles, tobacco use, and harmful alcohol consumption contribute to the rise in diseases such as cardiovascular diseases, diabetes and cancers.



Fig. 2.6: An unhealthy behaviour that must be avoided

- vii. **Environmental factors:** Environmental challenges such as pollution, deforestation, illegal mining practices, indiscriminate disposal of waste, smoke emitting from vehicles, littering and climate change, can have adverse effects on health. Air pollution, for instance, increases the risk of respiratory diseases.



Fig. 2.7: Environmental pollution in Accra

viii. **Limited health education and awareness:** Insufficient health education and awareness programs hinder knowledge about disease prevention, symptom recognition and appropriate health-seeking behaviours. This can result in delayed diagnosis, inadequate treatment and the spread of infectious diseases.



Fig. 2.8: Disease awareness and prevention campaign

a. Diseases/Disorders and Their Risk Factors

A risk factor is a condition that increases an individual's chances of getting a particular disease or injury. These factors may be genetic, environmental, behavioural or related to an individual's lifestyle choices. The following are some diseases and the risk factors associated with each:

i. Cardiovascular diseases

Risk factors:

- High blood pressure (hypertension)
- High cholesterol level
- Smoking or tobacco use

- Physical inactivity
- Unhealthy diet (high in saturated fats and cholesterol)
- Obesity or overweight
- Diabetes
- Family history of heart disease
- Age and gender (older age, male gender, post-menopausal women)



Fig. 2.9: A healthy heart and a damaged/sick heart

ii. Cancer

Risk factors:

- Tobacco use (smoking or chewing tobacco)
- Exposure to carcinogens (e.g. asbestos, radiation, certain chemicals)
- Family history of certain cancers
- Unhealthy diet (low fruit and vegetable intake, high processed or red meat consumption)
- Sedentary lifestyle
- Alcohol consumption
- Obesity or overweight
- Viral infections (e.g. human papilloma-virus (HPV), hepatitis B and C)
- Exposure to extreme sunlight (skin cancer)



Fig. 2.10: A damaged kidney split into two showing renal cancer at the top

iii. Type 2 Diabetes

Risk factors:

- Obesity or overweight
- Sedentary lifestyle
- Unhealthy diet (high in processed foods, sugary beverages)
- Family history of diabetes
- Ethnicity (higher risk for certain ethnic groups, such as African Americans, Hispanics, and Native Americans)
- Age (risk increases with age)
- Gestational diabetes during pregnancy
- Polycystic ovary syndrome (PCOS)
- Hypertension



Fig. 2.11: A skin disease associated with diabetes

iv. Respiratory Diseases

Risk factors:

- Smoking or exposure to second-hand smoke
- Environmental pollutants (e.g. polluted air, occupational exposure to chemicals)
- Family history of respiratory diseases
- Allergies
- Chronic obstructive pulmonary disease (COPD)
- Asthma triggers (e.g. allergens, pollution, exercise)

- Occupational exposure (e.g. asbestos, smoke, dust)

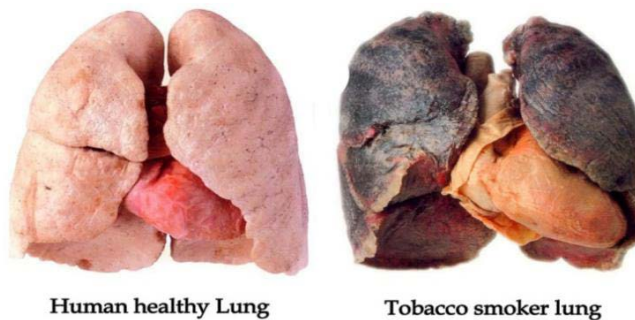


Fig. 2.12: Healthy lungs versus diseased lungs

v. **Mental Health Disorders**

Risk factors:

- Family history of mental illness
- Traumatic life events or experiences
- Chronic stress
- Substance abuse or addiction
- Physical, emotional, or sexual abuse
- Socioeconomic factors (e.g. poverty, unemployment, lack of social support)
- Genetic predisposition
- Certain personality traits

Activity 2.1

1. Use the following keywords to search for the meaning of human diseases (Human, Diseases, and Ghana). Summarise your findings below.

2. Find a partner and share your ideas. Together come up with a shared meaning of what a disease is. Write your definition below.

3. Provide written or oral feedback to your colleagues either in groups or in pairs.

Activity 2.2

In a group, complete the following:

1. Write down as many reasons as you can as to why diseases spread in Ghana.
2. Identify common diseases in your community. To complete this task, you can talk to community groups and members. Note your findings below:

3. For each of the diseases identified above, research and note how the disease is spread.

4. Create a table of available and unavailable health infrastructure in your community

Available infrastructure	Unavailable infrastructure

5. What are the implications of having a poor infrastructure on health? Use the information above to help you answer this question in your group.

6. How can environmental destruction have an impact on health?

Activity 2.3

1. In a group talk about and write down two ways income can affect the spread and occurrence of diseases for each of the groups below. To help you consider the following; living conditions, access to healthcare, immunity, overall vulnerability to pandemics etc.

Low-Income Community	Middle Income Group	High-Income Group

1. In your group, answer the following question and make notes below.

Why do vector-borne diseases spread in our community?

3. With your partner or group, present your work to the class. Decide with your teacher the best way to present this.

4. Make notes from other group presentations.

Notes**Activity 2.4**

1. Individually write down your ideas on the impact of unclean water and unsanitary conditions on your health.

2. Discuss your ideas with a partner and add any new ideas to your notes above.
3. With your partner, share your ideas with other groups or your class.

Extended Reading

1. This link highlights depicts air pollution in Accra
<https://www.ecohubmap.com/hot-spot/air-pollution-in-accra-ghana/hqoiml9l27pbw>
2. Follow the link below to watch a video on heart diseases <https://www.khanacademy.org/science/health-and-medicine/circulatory-system-diseases/coronary-artery-disease/v/heart-disease-and-heart-attacks>

CLASSIFICATIONS OF HUMAN DISEASES

Diseases can be broadly classified into two main categories: infectious diseases and non-infectious diseases. Each category encompasses various types of illnesses with unique characteristics, causes and risk factors.

a. Infectious diseases

Infectious diseases are diseases caused by pathogenic microorganisms such as bacteria, viruses, fungi, or parasites. These pathogens (disease causing organisms) can enter the body, multiply, and cause harm by disrupting the normal functioning of cells, tissues, and organs. Infectious diseases can spread from person to person, from animals to humans, or through contaminated food, water, or objects.

ii. Types of infections

Infectious diseases can be classified into several types depending on what causes the disease.

- **Viral infections:** These are caused by viruses. Viral infections occur when a virus enters a person's body and causes illnesses such as common cold, influenza, HIV/AIDS, hepatitis, and COVID-19.



Fig. 2.13: Viral disease

- **Bacterial infections:** These occur when harmful bacteria enter a person's body and release toxins that can make them sick. Examples include; strep throat (an infection that affects the throat, salmonella (an illness caused by consuming contaminated food), tuberculosis and whooping cough (pertussis).
- **Fungal infections:** Fungal infections occur when harmful fungi grow on or in a person's body and cause symptoms. Some examples of fungal infections are athlete's foot, ringworm, candidiasis and histoplasmosis (an infection found in the droppings of birds and bats).



Fig. 2.14: Fungal infection

- **Parasitic infections:** These occur when parasites use a person's body to live and reproduce causing symptoms and harm to the body. Examples: malaria plasmodium, toxoplasmosis (a disease transmitted through uncooked meat, soil or in cat faeces), and certain types of worms.

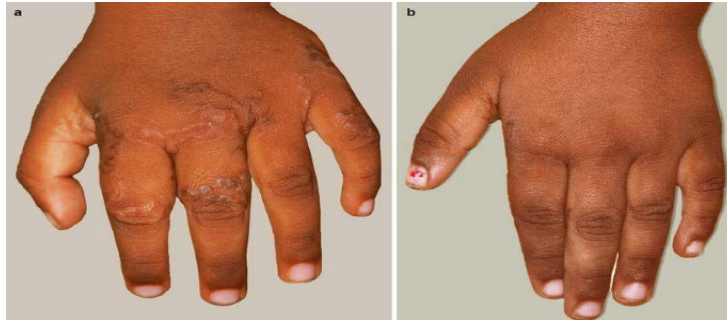


Fig. 2.15: Parasitic infection

iii. Modes of transmission of infectious diseases:

Infectious diseases can be transmitted through various modes, including:

- **Direct transmission:** This occurs through person-to-person contact, such as through respiratory droplets (e.g. tuberculosis), sexual contact (e.g. gonorrhoea, HIV/AIDS), or touching contaminated surfaces.
- **Indirect transmission:** Occurs through contaminated objects or vectors (organism that carry the disease). For example, insect bites (e.g. malaria), airborne droplets (tuberculosis), or environmental sources such as contaminated food or water (cholera).

iv. Risk factors of infectious diseases:

Several factors increase the risk of contracting infectious diseases. These include:

- **Poor personal hygiene:** Not maintaining proper personal hygiene practices, such as handwashing and having regular baths can increase the risk of spreading infectious diseases.
- **Lack of vaccination:** Failing to receive recommended vaccinations can lead to individuals contracting various infectious diseases like polio, measles, yellow fever, COVID-19 etc.



Fig. 2.17: Receiving a vaccination as protection against diseases

- **Close contact with infected individuals:** Being near an infected person, especially without proper protective measures, increases the chances of contracting an infectious disease.
- **Consumption of contaminated food or water:** Consuming contaminated food or water sources can lead to various waterborne or food-borne infectious diseases.



Fig. 2.18: Polluted water unsafe for drinking due to illegal mining

- **Travel to or living in endemic (areas where the disease is constantly present):** Travelling to or living in regions with high rates of specific infectious diseases can increase an individual's risk of exposure to and contraction of diseases.
- **Weakened immune system:** Having a compromised immune system due to underlying health conditions or certain medications makes individuals more susceptible to infections.
- **Poor sanitation and infrastructure:** Living in areas with inadequate sanitation, limited access to clean water or overcrowded conditions can facilitate the spread of infectious diseases.
- **Animal contact:** Direct or indirect exposure to animals, their waste or animal products can lead to zoonotic diseases that can be transmitted from animals to humans.
- **Lack of awareness about disease transmission and prevention:** Insufficient knowledge about infectious diseases, their transmission, and prevention measures can contribute to an increased risk of contracting and spreading infections.
- **Unsafe Sexual Practices:** Engaging in unprotected sexual activity, having multiple sexual partners or not practising safe sex (e.g. using condoms) can increase the risk of sexually transmitted infections (STIs).

b. Non-infectious diseases

Non-infectious diseases are caused by factors other than pathogens and cannot be transmitted from person to person. These diseases result from genetic predisposition, lifestyle choices, environmental factors, or a combination thereof. Examples include cardiovascular diseases, cancers, diabetes, respiratory diseases, and mental health disorders.

i. Examples of non-infectious diseases:

Non-infectious diseases encompass a wide range of medical conditions, common examples include:

- **Cardiovascular Diseases:** This category includes heart diseases such as coronary artery disease, heart attacks, and strokes.
- **Cancer:** Non-infectious diseases characterised by abnormal cell growth and proliferation, leading to the formation of tumors in various parts of the body.
- **Diabetes:** A metabolic disorder characterised by high blood sugar levels resulting from inadequate insulin production or insulin resistance.
- **Respiratory Diseases:** Conditions affecting the lungs and respiratory system, including asthma, chronic obstructive pulmonary disease (COPD), and lung cancer.
- **Mental Health Disorders:** Conditions affecting emotional, psychological, and social well-being, such as depression, anxiety disorders, bipolar disorder, and schizophrenia.

ii. Risk factors of non-infectious diseases:

The following are risk factors associated with non-infectious diseases:

- **Sedentary lifestyle:** Lack of regular physical activity or extended periods of inactivity increases the risk of developing various non-infectious diseases.
- **Unhealthy diet:** Consuming a diet high in processed foods, added sugars, and unhealthy fat and taking in low amounts of fruits, vegetables, and whole grains can contribute to the development of chronic diseases.
- **Tobacco and alcohol use:** Smoking and excessive alcohol consumption are associated with a wide range of non-infectious diseases, including cardiovascular diseases, respiratory disorders and certain types of cancers.
- **Obesity:** Excess body weight, especially when accompanied by a high body mass index (BMI), increases the risk of conditions such as heart disease, type 2 diabetes and certain cancers.
- **High blood pressure:** Consistently elevated blood pressure levels can damage blood vessels and increase the risk of heart disease, stroke and other cardiovascular disorders.

- **High cholesterol levels:** Elevated cholesterol levels can lead to the blockages in the arteries, increasing the risk of heart disease and stroke.
- **Stress:** Chronic stress can lead to various health issues, including increased blood pressure, weakened immune systems, mental health disorders and cardiovascular diseases.
- **Genetic predisposition:** Certain non-infectious diseases have a link with a person's genetics, meaning that, individuals with a family history of conditions like diabetes, cancer or cardiovascular disorders may be at a higher risk.
- **Environmental pollution:** Exposure to environmental pollutants such as bad and dusty air or hazardous substances can increase the risk of respiratory diseases, certain cancers and other health problems.
- **Lack of sleep:** Inadequate sleep or poor sleep quality can contribute to a range of health issues, including obesity, diabetes, weakened immune systems and mental health disorders.

Great Work! With your knowledge from the above, let's go through the following activities;

Activity 2.5

Working in a group, create a one-page report on infectious diseases. Present your report to the class. Talk to your teacher to agree on your presentation method.

Topics are as follows:

Group 1 – The types of human infections, including examples and characteristics.

Group 2 – Modes of transmission of infectious diseases, including examples.

Group 3 - Risk factors of infectious diseases, including examples.

Listen attentively to other presentations and provide feedback following each group's presentation.

Activity 2.6

1. Consider doing this in a group in class.
2. Each group is to identify some common infectious diseases. (Your teacher will divide you into groups and assign each group with an infectious disease).
3. In your group, create an awareness campaign to educate your peers on the assigned disease. (Include the type of infection, its mode of transmission and preventative measures)
4. Present your awareness campaign to the class for feedback

5. Revise your campaign with the feedback from peers in class
6. Present your revised campaign to your school or local community if possible.

Activity 2.7

1. In your opinion, what are the dangers of parasitic infections to the health of individuals?

2. Share your thoughts with a partner and add any new information to your notes above.
3. With your partner share your combined thoughts with your classmates.
4. Reflect on what you have learned and update your notes accordingly.

Extended Reading

1. Watch the video below on Health and diseases in Ghana
<https://www.youtube.com/user/ghanahealthservice>
2. The link below is a video that highlights infectious and non-infectious diseases
<https://www.khanacademy.org/science/how-does-the-human-body-work-class-12/x7babbc170453fdb8:human-health-and-disease/x7babbc170453fdb8:common-diseases-in-human-beings/v/infectious-and-non-infectious-diseases>
3. This video shows coronavirus transmission.
<https://www.youtube.com/watch?v=oqFn6AHoJZQ#:~:text=URL%3A%20https%3A%2F%2Fwww.100>
4. Click the link below to watch a video on non-infectious diseases and their risk factors.
https://www.youtube.com/watch?v=fK1_SH3X2ek

PREVENTION OF HUMAN DISEASES

1. Prevention and Control of Infectious Diseases

The following are ways to prevent and control infectious (communicable) diseases:

a. Practice good personal hygiene

Good personal hygiene is essential for preventing the spread of infectious diseases.

- i. Wash your hands frequently with soap and water for at least 20 seconds helps remove germs and prevent transmission.

- ii. Cover your mouth and nose with a tissue or your elbow when coughing or sneezing to prevent respiratory droplets from spreading.
- iii. Avoid touching your face, especially your eyes, nose, and mouth, with unwashed hands to reduce the risk of infection.



Fig. 2.19: Practise regular hand-washing with soap to prevent diseases

b. Ensure vaccination

- i. Follow the recommended vaccination schedule provided by healthcare professionals.
- ii. Stay updated on vaccinations for diseases like measles, influenza, hepatitis, COVID-19 and others.

c. Maintain physical distancing and use protective measures

- i. Keep a safe distance (at least 1 metre or 3 feet) from people who are sick.
- ii. Keep an arms-length away when talking to people.
- iii. Wear face masks or coverings when in crowded areas or when physical distancing is not possible.



Fig. 2.20: Protect yourself against infectious diseases in public

d. **Ensure food and water safety**

- i. Wash fruits and vegetables thoroughly with clean water before consuming.
- ii. Cook food at the recommended temperatures to kill bacteria and other pathogens.
- iii. Drink clean and safe water from trusted sources or use water filters and purification methods if necessary.



Fig. 2.21: Wash fruits and vegetables before eating

e. **Take precautions during travel**

- i. Research and be aware of any health risks or outbreaks in the destination you are traveling to.
- ii. Follow travel advisories and recommendations from health authorities.
- iii. Get necessary vaccinations before traveling, especially to areas with endemic diseases.



Fig. 2.22: Look out for warning signs

f. Strengthen the immune system

- i. Maintain a balanced and nutritious diet rich in fruits, vegetables and whole grains to provide essential nutrients and antioxidants.
- ii. Engage in regular physical activity to boost overall health and immunity.
- iii. Get enough sleep and manage stress levels.



Fig. 2.23: Engage in regular physical exercise to improve health

g. Promote sanitation and infrastructure development

- i. Follow Proper waste disposal practices in your community. Access to clean water, and improved sanitation facilities contribute to public health and reduce the burden of infectious diseases.
- ii. Support initiatives aimed at improving sanitation facilities and access to clean water.
- iii. Educate others about the importance of hygiene and cleanliness in preventing disease transmission.

h. Practice responsible animal contact

- i. Wash hands thoroughly after handling animals or their waste.
- ii. Avoid contact with wild or stray animals.
- iii. Ensure pets receive regular veterinary care and vaccinations.



Fig. 2.24: Send your pets and animals to the veterinary doctor regularly

i. Increase awareness and education

- i. Stay informed about infectious diseases through reliable sources, such as the Ministry of Education, Ghana Health Service and other reputable organisations.
- ii. Attend health education programs or workshops to learn about disease prevention and management.
- iii. Share accurate information with family and friends to combat misinformation and promote understanding.

j. Practice safe sexual behaviour

- i. Use barrier methods, such as condoms to protect against sexually transmitted infections (STIs).
- ii. Get regular STI screenings to detect infections early and encourage open communication with sexual partners about sexual health.
- iii. Seek medical advice and treatment if you suspect you may have been exposed to an STI.

2. Prevention and Control of Non-Infectious Diseases

The following are ways to prevent and control non-infectious diseases:

a. Regular physical activity

Engage in regular exercise or physical activity to maintain a healthy weight, improve cardiovascular health, and reduce the risk of various non-infectious diseases. Aim for at least 150 minutes of moderate-intensity aerobic activity per week, along with strength training exercises (Cleveland Clinic; Health Essentials, 2023).

b. Healthy eating habits

Adopt a balanced diet that includes a variety of fruits, vegetables, whole grains, lean proteins, and healthy fats. Limit the intake of processed foods, sugary snacks, and beverages. Maintain portion control and stay adequately hydrated.

c. Avoid tobacco and limit alcohol consumption

Stay away from smoking or any form of tobacco use. Avoid drinking alcohol but if you do consume it, do so in moderation. For adults, this generally means up to one drink per day for women and up to two drinks per day for men (Centres for Disease Control and Prevention, 2022).

d. Maintain a healthy weight

Achieve and maintain a healthy weight through a combination of regular physical activity and a nutritious diet. This reduces the risk of obesity-related diseases such as heart disease, type 2 diabetes, and certain cancers.

e. **Regular health check-ups:**

Schedule regular check-ups with healthcare professionals to monitor your health status, detect any early signs of disease and receive appropriate preventive care.

f. **Stress management**

Practice stress management techniques such as regular exercise, meditation, deep breathing exercises and engage in hobbies or activities that help you relax. Seek support from friends, family or professionals when needed.

g. **Manage blood pressure and cholesterol**

Monitor blood pressure and cholesterol levels regularly. If they are elevated, follow medical advice regarding lifestyle modifications, medication and dietary changes to manage them effectively.

h. **Genetic testing and counselling**

If you have a family history of certain non-infectious diseases, consider genetic testing or counselling to assess your risk and receive guidance on preventive measures.

i. **Environmental awareness**

Stay informed about environmental factors that can impact health and take necessary precautions. Minimise exposure to pollutants, maintain good indoor air quality and follow safety guidelines when working with hazardous substances.

j. **Prioritise sleep**

Establish a regular sleep routine and aim for 7-9 hours of quality sleep each night. Create a comfortable sleep environment and practice good sleep hygiene habits to improve overall well-being.

3. General Disease Prevention and Management Measures

a. **Practise good hygiene**

- i. Wash hands frequently with soap and clean water, especially before eating and after using the toilet.
- ii. Promote proper sanitation by using toilets or latrines and safely disposing of waste.
- iii. Maintain cleanliness in living spaces and promote a clean environment in communities.

b. **Use protection and practise safe behaviour**

- i. Use insecticide-treated bed nets to prevent malaria.
- ii. Adopt safe behaviours to prevent accidents and injuries, such as wearing seat belts, using helmets and following road safety guidelines.



Fig. 2.25: Sleep inside insecticide-treated bed nets for protection against mosquitoes.

c. Get vaccinated

- i. Stay up to date with immunisations to protect against vaccine-preventable diseases. Follow the national immunisation schedule and seek vaccinations for yourself and your family.

d. Seek early diagnosis and treatment

- i. Recognise the signs and symptoms of common diseases, such as malaria, TB and Non-Communicable Diseases (NCDs).
- ii. If you or someone you know experiences symptoms, seek prompt medical attention and follow healthcare provider recommendations for diagnosis, treatment and management.

e. Practise healthy lifestyle habits

- i. Avoid unnecessary injuries, engage in regular physical activity to promote overall health and reduce the risk of Non-Communicable Diseases (NCDs).

f. Educate and raise awareness

- i. Educate yourself and others about health issues, including preventive measures, symptoms and available resources.
- ii. Raise awareness within your community about disease prevention, hygiene practices and the importance of seeking healthcare.

g. Support health initiatives

- i. Participate in community health programs, campaigns and initiatives aimed at improving health and preventing diseases.
- ii. Support organisations and initiatives working towards improving healthcare access, disease prevention and health promotion.



Fig. 2.26: Engage in community health programmes like health walks

4. Role of Physical Education and Health in Disease Prevention and Promoting Good Health

Physical education and health:

- a. Promotes healthy lifestyle choices (physical activity, balanced diet).
- b. Enhances knowledge about disease prevention and management.
- c. Develops skills to identify and avoid risky behaviours.
- d. Encourages regular health screenings and self-care practices.

Activity 2.8

1. I suggest you do this in groups
2. Identify five common diseases in your community and describe how to prevent them.
3. Is the disease infectious or non-infectious?
4. Use the information gathered to complete the table below

Disease	How to prevent disease	Infectious or non-infectious

Activity 2.9

- In your groups, select a leader to ballot for a topic.
- Your teacher will give you additional information on each of the topics to guide you.
- Design a project to be shared within your school/community on your assigned topic:

Project Topics:

- Common diseases in your school and how to prevent them. Prepare a report for your school authorities.
- Organise a personal hygiene day in your school. How to prevent disease and live healthier lives.
- Organise a handwashing day in your school.
- Organise a health walk programme in your community.
- Create an awareness campaign on how to avoid STI's.

Activity 2.10

With a partner, identify five places or occasions where it is important to practice good personal hygiene and note why this is important.

Place or occasion	Why is it important
1.	
2.	
3.	
4.	
5.	

Activity 2.11

Monitor your daily hygiene activities for one week. At the end of the week reflect on your activities and note any changes you are going to make.

Day	Hygiene Activities
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

Extended Reading

1. The link shows diseases prevention and control
<https://m.youtube.com/watch?v=6k0kXHnC0xs>
2. The link below highlights the importance of vaccination in disease prevention and control
<https://africacdc.org/video/17027/>
3. This link will access the role of physical activity on disease prevention and control.
<https://mfa.gov.gh/index.php/joint-health-walk-in-commemoration-of-the-55th-anniversary-of-the-african-union-and-the-70th-anniversary-of-the-international-day-of-united-nations-on-saturday-19th-may-2018/>

Review Questions

1. What are human diseases?

2. Describe the relationship between poverty and the spread of diseases in Ghana.

3. Which single factor from the content, would you say has the most significant impact on the occurrence of disease in Ghana and why?

4. Place each of the following into the correct column below.

- | | |
|----------------------------|------------------|
| Asthma | COVID-19 |
| Influenza (Flu) | Breast Cancer |
| Type 2 Diabetes | Tuberculosis |
| Lung Cancer Ringworm | |
| Coronary Artery Disease | Candidiasis |
| Hepatitis | Whooping Cough |
| Malaria | Depression |
| Toxoplasmosis | Bipolar Disorder |
| HIV/AIDS Anxiety Disorders | |
| Stroke | Schizophrenia |

Infectious Diseases	Non-Infectious Diseases
1. Influenza (Flu)	1. Anxiety Disorders
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.

5. Read the case study carefully and identify the risk factors present in Nyarko’s lifestyle.

a. Case Study:

Nyarko is a 45-year-old office worker who spends most of his day sitting at a desk. He smokes a pack of cigarettes daily and often eats fast food for lunch. His BMI indicates he is overweight, and his recent check-up revealed high blood pressure and high cholesterol levels. Nyarko rarely exercises and has a family history of heart disease.

b. Risk Factors:

Match each infectious disease with its corresponding mode of transmission:

Infectious Disease	Mode Of Transmission
Common Cold	Contaminated water or food
COVID-19	Airborne droplets
Tuberculosis	Respiratory droplets, direct contact, contaminated surfaces
HIV/AIDS	Contact with infected bodily fluids
Cholera	Direct contact with respiratory droplets or contaminated surfaces

6. Describe five ways of preventing and controlling infectious and non-infectious diseases.

Infectious diseases

Prevention	Control

Non-infectious diseases

Prevention	Control

7. Complete the table below for each personal hygiene practice.

Practice	How it's carried out	Impact on disease prevention
Hand washing		
Hand washing		
Covering mouth/nose		
Avoid touching face		

a. Describe three pieces of travel information you should follow before traveling to a new destination in order to maintain health and safety.

1	
2	
3	

b. Complete the chart to show how different types of physical activities impact on the prevention of non-infectious diseases.

Physical activity	Impact on diseases

Answers to Review Questions

1. Human disease refers to abnormal conditions that affect the body's optimum functioning, causing physical or mental discomfort.
2. In Ghana, poverty and disease are closely related, with limited access to healthcare, poor living conditions, and malnutrition impacting the spread of illness. Impoverished communities often lack adequate sanitation and hygiene, leading to diseases like cholera and malaria. High population density and poor nutrition weaken immune systems, making individuals more susceptible to infections. Also, limited health education and reliance on unsafe water sources further increases the occurrence of disease. Economic differences restrict access to essential resources and services, leading to a cycle where poverty and disease keep each other going. To solve these problems, we need strategies to improve healthcare access, living conditions, and education, while reducing economic inequalities.
3. For example, poverty and socioeconomic inequality significantly impact disease prevalence in Ghana because they limit access to healthcare, nutritious food, and proper living conditions, while also contributing to poor health literacy and inadequate healthcare infrastructure. Low incomes restrict individuals' ability to afford medical services, leading to delayed treatment and the spread of diseases. Malnutrition weakens immune defenses, increasing susceptibility to infections. Overcrowded and unsanitary living conditions in impoverished areas promote communicable diseases, while limited health education hinders disease prevention and timely diagnosis.

4.

Infectious Diseases	Non-Infectious Diseases
Whooping Cough	Depression
Tuberculosis	Bipolar Disorder
Ringworm	Anxiety Disorders
Candidiasis	Schizophrenia
COVID-19	Stroke
Hepatitis	Breast Cancer
Malaria	Asthma
Toxoplasmosis	Type 2 Diabetes

HIV/AIDS	Lung Cancer
Influenza (Flu)	Coronary Artery Disease

5. a.

- Sedentary lifestyle
- Smoking
- Poor diet (fast food)
- Overweight
- High blood pressure
- High cholesterol
- Family history of heart disease

b.

Infectious Disease	Mode Of Transmission
Common Cold	Direct contact with respiratory droplets or contaminated surfaces.
COVID-19	Respiratory droplets, direct contact, contaminated surfaces.
Tuberculosis	Airborne droplets.
HIV/AIDS	Contact with infected bodily fluids.
Cholera	Contaminated water or food.

6.**a. Infectious Diseases****i. Preventive Measures:**

- **Vaccination:** Protecting against diseases like measles, influenza, and COVID-19 through immunisation.
- **Hygiene:** Regular hand washing, using hand sanitizers, and maintaining personal cleanliness.
- **Sanitation:** Ensuring clean water, proper sewage disposal, and a clean environment.
- **Avoiding Exposure:** Minimising contact with infected individuals, using masks, and practicing social distancing.
- **Health Education:** Informing people about how diseases spread and how to prevent them.

ii. Control Measures:

- Quarantine and Isolation: Separating infected individuals to stop disease spread.
- Treatment: Providing appropriate medical care, including antiviral or antibiotic medications.
- Surveillance: Monitoring disease spread through reporting and data analysis.
- Vector Control: Reducing populations of disease-carrying organisms like mosquitoes.
- Public Health Measures: Implementing policies like travel restrictions and lockdowns to control outbreaks.

b. Non-Infectious Diseases:**i. Preventive Measures:**

- Healthy Lifestyle: Promoting a balanced diet, regular exercise, and avoiding tobacco and excessive alcohol.
- Regular Screenings: Early detection through routine health check-ups for conditions like cancer and diabetes.
- Education: Raising awareness about risk factors and encouraging healthy behaviors.
- Environmental Measures: Reducing exposure to hazards like air pollution and toxic chemicals.
- Genetic Counseling: Providing advice for those with a family history of genetic disorders.

ii. Control Measures:

- Medication: Managing conditions such as hypertension, diabetes, and high cholesterol with drugs.
- Medical Procedures: Treating illnesses like heart disease and cancer with appropriate medical interventions.
- Lifestyle Changes: Encouraging ongoing adjustments in diet, exercise, and stress management.
- Support Systems: Offering psychological support, rehabilitation, and chronic disease management programs.
- Policies and Laws: Implementing regulations to reduce risk factors, like smoking bans and nutritional labelling.

7.

Practice	How it's carried out	Impact on disease prevention
Hand washing	Wash hands with soap and water	Reduces transmission of germs
Covering mouth/nose	Use tissue/elbow when coughing	Prevents spread of respiratory droplets
Avoid touching face	Keep hands away from face	Reduces risk of infection from contaminated surfaces

a.

- i Research and be aware of any health risks or outbreaks in the destination you are traveling to.
- ii Follow travel advisories and recommendations from health authorities.
- iii Get necessary vaccinations before traveling, especially to areas with endemic diseases.

b.

Activity	Impact on diseases
Aerobic exercise (eg. Running, walking, cycling)	Reduces risk of heart disease, diabetes, and improves weight management
Strength training (eg. Weightlifting, resistance band exercises)	Improves muscle strength, bone density
Flexibility exercises (eg. Stretching)	Reduces stress, enhances joint health, reduce pain associated with arthritis.

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